INDEX TO VOLUME 27

The index covers only the major papers, their authors, and principal headings. It does not include the abstracts. For the latter there is a separate index to authors on pages 169A–184A. Minutes of business meetings, officers, and reports are entered only under American Society of Zoologists.

Abstracts, see note above.
  Index of authors, annual meeting, New Orleans, Louisiana, 169A–177A.
  Key word index, 178A–184A.
  Of annual meeting, New Orleans, Louisiana, 1A–184A.
Adaptation in reptiles, cardiovascular, 1–131.
American Society of Zoologists,
  Committees, iv–v.
  Divisional officers, iv.
  Financial statement, ix–x.
  Minutes of annual business meeting, vi–viii.
  Officers for 1987, iv–v.
  Presidents, iii.
American Zoologist,
  Directions for authors, cover 1.
  Editorial board, cover 1.
  Statement of ownership, xvi.
  Subscriptions, cover 1.
ANDERSON, GARY AND NATHAN H. HART, Films and videotapes in developmental biology, 725–730.
ATWOOD, H. L. AND G. A. LNENICKA, Role of activity in determining properties of the neuromuscular system in crustaceans, 977–989.
BEHAVIOR AS A FACTOR IN THE POPULATION DYNAMICS OF RODENTS: NEW CONCEPTS AND APPROACHES, 819–969.
  Behavior—genetic population regulation, 921–927.
  Early behavioral research, 825–837.
  Intrinsic differences among deermouse laboratory populations, 853–866.
  Introduction, 821–823.
  Laboratory behavior and populations, 941–951.
  Mating system of *Microtus ochrogaster,* 909–920.
  Population studies in white-footed mice, 879–890.
  Rat populations of NIMH, 839–851.
  Regulation of puberty, 891–898.
  Reproductive inhibition of female mice, 867–878.
  Rodent population biology, 953–969.
  Seasonal breeding, 929–940.
  Social dynamics in meadow voles, 899–908.
BENSON, KEITH R., H. Newell Martin, W. K. Brooks, and the reformation of American biology, 759–771.
BERGER, PHILIP, J., The reptilian baroreceptor and its role in cardiovascular control, 111–120.
BICKLER, PHILIP E., see WHITE, FRED N.
BONNER, JOHN TYLER, The next big problem in developmental biology, 715–723.
BOOK REVIEWS, 219–220; 733–736; 971–972; 1099–1101.
BRONSON, F. H. AND GLENN PERRIGO, Seasonal regulation of reproduction in muroid rodents, 929–940.
BRYANT, SUSAN V., DAVID M. GARDINER, AND KEN MUNEOKA, Limb development and regeneration, 675–696.
BUECHNER, MARYBETH, see STAMPS, JUDY A. *et al.*
BURGGREN, WARREN W., Form and function in reptilian circulations, 5–19.
BURGGREN, WARREN W., see LILLYWHITE, HARVEY B.
CARDIOVASCULAR ADAPTATION IN REPTILES, 1–131.
  Cardiac responsiveness in *Naja naja,* 121–131.
  Cardiopulmonary gas exchange in the turtle, 31–39.
  Cardiovascular function in turtles, 49–58.
  Circulatory adaptations of snakes, 81–95.
  Circulatory patterns in reptiles, 5–19.
  Control of heat exchange: Body size and shape, 69–79.
  Hypoxic reptiles, 21–29.
  Introduction, 3–4.
  Physiological responses to temperature in a snake, 41–47.
  Physiology of hibernation in turtles, 57–68.
  Reflex control of cardiovascular system, 111–120.
  Scaling snakes, 97–109.
CARPENTER, F. LYNN, Food abundance and territoriality: To defend or not to defend?, 387–399.
CARPENTER, F. LYNN, Introduction to the symposium: Territoriality: Conceptual advances in field and theoretical studies, 223–228.
CARPENTER, F. LYNN, The study of territoriality: Complexities and future directions, 401–409.
CARTER, CAROL S., see GETZ, LOWELL L.
CELL-CELL INTERACTIONS AND THE CELL SURFACE IN NEURAL RETINA DEVELOPMENT, 133–218.
  Biological roles for R-cognin, 171–178.
  Cell adhesion in nerve patterning, 207–218.
  Cell contact and phenotype regulation, 137–144.
  Glc-1-p containing glycoproteins, 179–187.
  Interactions among neural retina cells, 145–159.
  Introduction, 135–136.
  Markers of cell position affect synapse formation, 189–206.
  Neuronal-glial interactions, 161–169.
CHIU, K. W., see SHAM, JAMES S. K.
CHRISTIE, THERESA, see HAUSMAN, ROBERT E. *et al.*
COSTELLO, WALTER, see SILVERMAN, HAROLD *et al.*
CROW, MICHAEL T., The determinants of muscle fiber type during embryonic development, 1043–1053.
DAVIDSON, ERIC H., Understanding embryonic development: A contemporary view, 581–591.
DAVIS, DAVID E., Early behavioral research on populations, 825–837.
Developmental biology, science as a way of knowing, 411–732.
DEWSBURY, DONALD A., Laboratory research on

behavioral interactions as generators of population phenomena in rodents, 941–951.
DIBERARDINO, MARIE A., Genomic potential of differentiated cells analyzed by nuclear transplantation, 623–644.
DOBI, ERNEST T., see HAUSMAN, ROBERT E. *et al.*
DRICKAMER, LEE C., Behavioral aspects of rodent population biology, 953–969.
DRICKAMER, LEE C., Introduction to the symposium: Behavior as a factor in the population dynamics of rodents: New concepts and approaches, 821–823.
DUPRÉ, R. KEITH, see WOOD, STEPHEN C. *et al.*
EAKIN, RICHARD M., see "SPEMANN, HANS."
EBERT, JAMES D., Why a symposium on biology at Johns Hopkins?, 751–758.
EDELMAN, GERALD M. AND WARREN J. GALLIN, Cell adhesion as a basis of pattern in embryonic development, 645–656.
FEENER, DONALD H., JR., see JOHNSON, LESLIE K. *et al.*
FRASER, SCOTT E., Adhesive interactions and the patterning of nerve connections: An experimental and theoretical approach, 207–218.
GALLIN, WARREN J., see EDELMAN, GERALD M.
GARDINER, DAVID M., see BRYANT, SUSAN V. *et al.*
GATTEN, ROBERT E., JR., Cardiovascular and other physiological correlates of hibernation in aquatic and terrestrial turtles, 59–68.
GAUTHIER, GERALDINE F., Vertebrate muscle fiber types and neuronal regulation of myosin expression, 1033–1042.
GERHART, JOHN C., Determinants of early amphibian development, 593–605.
GETTY, THOMAS, Dear enemies and the prisoner's dilemma: Why should territorial neighbors form defensive coalitions?, 327–336.
GETZ, LOWELL L., JOYCE E. HOFMANN, AND CAROL S. CARTER, Mating system and population fluctuations of the prairie vole, *Microtus ochrogaster*, 909–920.
GILBERT, SCOTT F., In friendly agreement: Wilson, Morgan, and the embryological origins of the gene theory, 797–806.
GORDON, TESSA, Muscle plasticity during sprouting and reinnervation, 1055–1066.
GOVIND, C. K., DEF. MELLON, JR., AND M. M. QUIGLEY, Muscle and muscle fiber type transformation in clawed crustaceans, 1079–1098.
GOVIND, C. K., see SILVERMAN, HAROLD.
GREEN, PAUL B., Inheritance of pattern: Analysis from phenotype to gene, 657–673.
HAIGH, GALE R., Reproductive inhibition of female *Peromyscus leucopus*: Female competition and behavioral regulation, 867–878.
HART, DAVID D., Feeding territoriality in aquatic insects: Cost-benefit models and experimental tests, 371–386.
HART, NATHAN H., see ANDERSON, GARY.
HAUSMAN, ROBERT E., ERNEST T. DOBI, NOREEN M. TROCCOLI, AND THERESA CHRISTIE, Possible roles for cognin in chick embryo neural retina, 171–178.
HICKS, JAMES W., see WOOD, STEPHEN C. *et al.*
HILL, JAMES, The rat population of NIMH: Density, reproduction, and the neocortex, 839–851.
HIXON, MARK A., Territory area as a determinant of mating systems, 229–247.
HOFMANN, JOYCE E., see GETZ, LOWELL L.
HUBBELL, STEPHEN P., see JOHNSON, LESLIE K. *et al.*
JACKSON, DONALD C., Cardiovascular function in turtles during anoxia and acidosis: *In vivo* and *in vitro* studies, 49–58.
Johns Hopkins University, the role of, in the development of experimental and quantitative biology in America, 747–817.
JOHNSON, LESLIE K., STEPHEN P. HUBBELL, AND DONALD H. FEENER, JR., Defense of food supply by eusocial colonies, 347–358.
JORGENSEN, ANNELISE O., Immunolocalization of sarcoplasmic reticulum proteins in mammalian skeletal muscle fibers, 1021–1032.
JOSEPHSON, ROBERT K. AND DAVID YOUNG, Fiber ultrastructure and contraction kinetics in insect fast muscles, 991–1000.
KINGSLAND, SHARON, A man out of place: Herbert Spencer Jennings at Johns Hopkins, 1906–1938, 807–817.
KREBS, JOHN R., see YDENBERG, RONALD C.
KRISHNAN, V. V., see STAMPS, JUDY A. *et al.*
LACHER, THOMAS E., JR., see MARES, MICHAEL A.
LI, HSI-PING, see SHEFFIELD, JOEL B.
LILLYWHITE, HARVEY B., Circulatory adaptations of snakes to gravity, 81–95.
LILLYWHITE, HARVEY B. AND WARREN W. BURGGREN, Introduction to the symposium: Cardiovascular adaptation in reptiles, 3–4.
LINSER, PAUL J., Introduction to the symposium: Cell-cell interactions and the cell surface in neural retina development, 135–136.
LINSER, PAUL J., Neuronal-glial interactions in retina development, 161–169.
LNENICKA, G. A., see ATWOOD, HAROLD.
MADISON, DALE M. AND WILLIAM J. MCSHEA, Seasonal changes in reproductive tolerance, spacing, and social organization in meadow voles: A microtine model, 899–908.
Maienschein, Jane, H. N. Martin, and W. K. Brooks, Exemplars for American biology?, 773–783.
MAIER, LOTHAR, see RATHMAYER, WERNER.
MARCHASE, RICHARD B., Glucose-1-phosphate containing glycoproteins and interneuronal adhesion, 179–187.
MARES, MICHAEL A. AND THOMAS E. LACHER, JR., Social spacing in small mammals: Patterns of individual variation, 293–306.
MCNAIR, JAMES N., The effect of variability on the optimal size of a feeding territory, 249–258.
MCSHEA, WILLIAM J., see MADISON, DALE M.
MELLON, DEF., JR., see GOVIND, C. K. *et al.*
MOORE, JOHN A., Edmund Beecher Wilson, class of '81, 785–796.
MOORE, JOHN A., Science as a way of knowing—developmental biology, 415–573.
MORSE, M. PATRICIA, Comparative functional morphology of the bivalve excretory system, 737–746.
MOSCONA, A. A., Role of cell contact in phenotype

stability and modification: Studies on retina cells, 137–144.
MUNEOKA, KEN, see BRYANT, SUSAN V. *et al.*
MUSCLE FIBER TYPING AS A BIOASSAY OF NERVE-MUSCLE INTERACTION: COMPARISON OF ARTHROPOD AND VERTEBRATE SYSTEMS, 973–1098.
Bioassay for muscle fiber typing, 1021–1032.
Crustacean neuromuscular determination, 977–989.
Fiber type transformation, 1079–1098.
Fiber ultrastructure and contraction kinetics, 991–1000.
Muscle fiber types in crabs, 1067–1077.
Muscles innervated by single motoneurons, 1001–1010.
Muscle type correlates in crustaceans, 1011–1019.
Myosin expression in vertebrate muscle fibers, 1033–1042.
Nerve-muscle plasticity, 1055–1066.
Rationale, 975–976.
Vertebrate fiber types during development, 1043–1053.
MYKLES, DONALD L., see SILVERMAN, HAROLD *et al.*
Nerve-muscle interaction, muscle fiber typing as a bioassay of, comparison of arthropod and vertebrate systems, 973–1098.
Neural retina development, cell-cell interactions and the cell surface in, 133–218.
PANG, PETER K. T., see SHAM, JAMES S. K. *et al.*
Past-presidential address, 737–746.
PERRIGO, GLENN, see BRONSON, F. H.
Population dynamics of rodents: New concepts and approaches, behavior as a factor in the, 821–969.
QUIGLEY, M. M., see GOVIND, C. K. *et al.*
QUINN, C. EDWARD, Introduction to the symposium: The role of Johns Hopkins University in the development of experimental and quantitative biology in America, 749.
RATHMAYER, WERNER AND LOTHAR MAIER, Muscle fiber types in crabs: Studies on single identified muscle fibers, 1067–1077.
THE ROLE OF JOHNS HOPKINS UNIVERSITY IN THE DEVELOPMENT OF EXPERIMENTAL AND QUANTITATIVE BIOLOGY IN AMERICA, 747–817.
Biology at Johns Hopkins, 751–758.
Edmund Beecher Wilson, 785–796.
Embryological origins of the gene theory, 797–806.
H. N. Martin and W. K. Brooks, 773–783.
H. S. Jennings at Johns Hopkins, 807–817.
Introduction, 749.
Reformation of American biology, 759–771.
SCHOENER, THOMAS W., Time budgets and territory size: Some simultaneous optimization models for energy maximizers, 259–291.
SEYMOUR, ROGER S., Scaling of cardiovascular physiology in snakes, 97–109.
SCIENCE AS A WAY OF KNOWING—DEVELOPMENTAL BIOLOGY, 411–732.
Cell adhesion and development, 645–656.
Cell lineages and fate, 607–622.
Developmental biology, 415–573.
Developmental biology—the next big problem, 715–723.
Early amphibian development, 593–605.
Embryonic induction, 575–579.
Films and video tapes, 725–730.
Genomic potential of differentiated cells, 623–644.
Human issues in development, 697–714.
Index, 731–732.
Inheritance of pattern, 657–673.
Limb development and regeneration, 675–696.
Understanding embryonic development, 581–591.
SHAM, JAMES S. K., K. W. CHIU, AND PETER K. T. PANG, Cardiac responsiveness to chronotropic agents in the cobra, *Naja naja* L.: Effects of temperature and thyroid hormones, 121–131.
SHEFFIELD, JOEL B. AND HSI-PING LI, Interactions among cells of the developing neural retina *in vitro*, 145–159.
SHERIDAN, MARITA, see TAMARIN, ROBERT H.
SILVERMAN, HAROLD, WALTER COSTELLO, AND DONALD L. MYKLES, Morphological fiber type correlates of physiological and biochemical properties in crustacean muscle, 1011–1019.
SILVERMAN, HAROLD AND C. K. GOVIND, Muscle fiber typing as a bioassay of nerve-muscle interaction: Comparison of arthropod and vertebrate systems—rationale for the symposium, 975–976.
"SPEMANN, HANS," Embryonic induction, 575–579.
STAMPS, JUDY A., MARYBETH BUECHNER, AND V. V. KRISHNAN, The effects of habitat geometry on territorial defense costs: Intruder pressure in bounded habitats, 307–325.
STINNER, JERRY N., Thermal dependence of air convection requirement and blood gases in the snake *Coluber constrictor*, 41–47.
STOKES, DARRELL R., Insect muscles innervated by single motoneurons: Structural and biochemical features, 1001–1010.
TAMARIN, ROBERT H. AND MARITA SHERIDAN, Behavior-genetic mechanisms of population regulation in microtine rodents, 921–927.
TERMAN, RICHARD C., Intrinsic behavioral and physiological differences among laboratory populations of prairie deermice, 853–866.
TERRITORIALITY: CONCEPTUAL ADVANCES IN FIELD AND THEORETICAL STUDIES, 221–409.
Complexities and future directions, 401–409.
Dear enemies and the prisoner's dilemma, 327–336.
Eusocial territoriality, 347–358.
Feeding territoriality in aquatic insects, 371–386.
Feeding *vs.* territorial vigilance, 337–346.
Food abundance and territoriality, 387–399.
Habitat geometry and intruder pressure, 307–325.
Introduction, 223–228.
Optimal feeding territory size, 249–258.
Optimization models for energy maximizers, 259–291.
Social spacing in small mammals, 293–306.
Territoriality in response to plant defenses, 359–369.
Territory area and mating systems, 229–247.
TRISLER, DAVID, Molecular markers of cell position

in avian retina are involved in synapse formation, 189–206.
TROCCOLI, NOREEN M., see HAUSMAN, ROBERT E. *et al.*
TURNER, J. SCOTT, The cardiovascular control of heat exchange: Consequences of body size, 69–79.
VANDENBERGH, JOHN G., Regulation of puberty and its consequences on population dynamics of mice, 891–898.
VESSEY, STEPHEN H., Long-term population trends in white-footed mice and the impact of supplemental food and shelter, 879–890.
VOLPE, E. PETER, Developmental biology and human concerns, 697–714.
WHITE, FRED N. AND PHILIP E. BICKLER, Cardiopulmonary gas exchange in the turtle: A model analysis, 31–39.
WHITHAM, THOMAS G., Evolution of territoriality by herbivores in response to host plant defenses, 359–369.
WHITTAKER, J. RICHARD, Cell lineages and determinants of cell fate in development, 607–622.
WOOD, STEPHEN C., JAMES W. HICKS, AND R. KEITH DUPRÉ, Hypoxic reptiles: Blood gases, temperature regulation and control of breathing, 21–29.
YDENBERG, RONALD C. AND JOHN R. KREBS, The tradeoff between territorial defense and foraging in the Great Tit (*Parus major*), 337–346.
YOUNG, DAVID, see JOSEPHSON, ROBERT K.